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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/901,095	07/10/2001	Mutsumi Kimura	040499.01	8396
25944	7590	01/27/2006	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			GHYKA, ALEXANDER G	
			ART UNIT	PAPER NUMBER
			2812	

DATE MAILED: 01/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/901,095	KIMURA ET AL.	
	Examiner	Art Unit	
	Alexander G. Ghyska	2812	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 50-52, 55, 60-64, 67, 69, 70, 101 and 102 is/are pending in the application.

4a) Of the above claim(s) ____ is/are withdrawn from consideration.

- 5) ☐ Claim(s) ____ is/are allowed.

- 6) ☒ Claim(s) 50-52, 55, 60-64, 67, 69, 70, 101 and 102 is/are rejected.

- 7) ☐ Claim(s) ____ is/are objected to.

- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

ALEXANDER GHYKA
PRIMARY EXAMINER

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Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Applicants' response of 11/21/05 has been considered. New Claim 102 has been added. Therefore, Claims 50, 51, 52, 55, 60-64, 67, 69, 70, 101 and 102 are under consideration. The Applicants' arguments have been considered, but they are not persuasive for the reasons as discussed below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

Art Unit: 2812

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 50-52, 55, 60-64, 67, 69, 70, 101 and 102 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiba (US 6,180,294) in view of Musho et al (5,202,261) and Hirai et al (5,477,352) for the reasons of record.

The present claims generally require forming a pattern on a substrate by deposition of an organic material comprising the steps of depositing a semiconducting organic material in a solvent onto a substrate by ink jet printing; and evaporating the solvent, whereby the organic material remains on the substrate.

Shiba et al disclose a color filter having a substrate and an ink absorptive resin layer. Shiba disclose forming a pattern on a substrate using a liquid crystal composition by ink jet printing. See column 5, line 60 to column 6, line 51, column 8, lines 20-45, column 35, Example 72 and Figures 1, 2 and 4. Shiba disclose polymer based materials as required by some of the present dependent claims. See columns 3 and 4. The pattern is then metallized as required by present claims 63, 67 and 101. See column 7, lines 18-35. Shiba et al also disclose that the polymer layer can be formed by "spin coating, roll coating, bar coating, spray coating or dip coating, and this coating means is not particularly restrictive". See column 6, lines 40-45.

Therefore, Shiba et al disclose all of the presently claimed limitations with the exception using an ink jet printer to form the polymer layer and of evaporating a solvent, whereby the organic material remains on the substrate.

Musho et al disclose the formation of conducting polymers into layers or films by dissolving them in organic solvents and using a batch process such as spin coating or ink jet printing. See column 22, line 55 to column 23, line 20. Moreover, Musho et al disclosed the utility of the conducting polymers in light emitting devices. See column 2, lines 65-70.

Hirai et al disclose a liquid crystal display device with liquid crystal dispersed or impregnated in a perfluoro-type polymer of a perfluoroalkyl acrylate or methacrylate. Hirai et al disclose that dispersing the liquid crystal material in the transparent fluoro-type polymer (or copolymer) can be conducted by mixing the fluoro-type polymer (or copolymer) the liquid crystal material and the solvent to form a solution, applying the solution to the substrate, and then evaporating the liquid crystal material in the fluoro type polymer. See column 3, line 52 to column 4, line 12.

It would have been obvious for one of ordinary skill in the art, at the time of the invention, to use an ink jet printer to disperse the polymer and arrive at the present limitations as the Shiba reference discloses the use of spincoating to form the layer, and the Musho reference discloses the equivalence of spincoating and ink jet printing in the formation of polymer layers. One of ordinary skill in the art would have found it obvious to use ink jet printing as disclosed by Musho et al, in the process as described by Shiba et al, for its known benefit in the art in forming polymer layers as disclosed by the Musho reference. Furthermore, it would have been obvious to one of ordinary skill in the

Art Unit: 2812

art to form an LCD as disclosed by Shiba et al, by using the method of Hirai et al which involves combining with an organic solvent and evaporating the organic solvent, for its known benefit in the art in dispersing the liquid crystal material in a polymer. A known method (mix with solvent and evaporate solvent of Hirai et al) of forming a known device (the LCD of Shiba et al) is *prima facie* obvious. As the references are drawn to light emitting devices and their manufacture, their combination would be *prima facie* obvious.

Response to Applicants' Arguments

The Applicants argue that the cited references do not require the formation of a pattern, and argue that the term pattern requires a design arrangement and/or structure other than a solid, continuous layer, even when formed of dots on a microscopic scale. The Examiner notes that the present claims do not define what type of pattern, and encompass any pattern. The Examiner maintains that even though the Shiba reference does not disclose an ink jet printer it would have been obvious for one of ordinary skill in the art, at the time of the invention, to use an ink jet printer to disperse the polymer and arrive at the present limitations as the Shiba reference discloses the use of spincoating to form the layer, and the Musho reference discloses the equivalence of spincoating and ink jet printing in the formation of polymer layers. Furthermore, the Examiner maintains that the limitation "for forming a pattern" appears in the preamble of the claims with the exception of newly added Claim 102. Applicants cite relevant case law in the interpretation of limitations in the preamble. Applicants argue that the recitation of a

Art Unit: 2812

pattern in the preamble is clearly a structural limitation, in that a pattern is formed. In response to applicant's arguments, the recitation for forming a pattern has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). The Examiner maintains that the phrase "for forming a pattern" is a statement of intended utility as the formation of the pattern is not required and the process steps are able to stand alone. Moreover, the Examiner notes that the body of the claim does not require that a pattern be formed, only that that the process could be used for this purpose. The word "for" in the present case denotes an intended purpose, not the actual formation of a structure.

Furthermore, the Examiner takes the position that since the cited prior art also teaches an ink-jet printing method, a pattern could be formed. The word "print" is defined by Webster's New World Dictionary as (3) Lettering or other impression made in ink from type by a printing press or other means... (4) A design or picture transferred from a medium,.. "printing" is the process ... of producing printed material. Thus the term "ink-jet printing inherently means that a design or "pattern" is formed, even if this is on the microscopic scale based on the way the ink is laid down. The Examiner notes that the present claims do not require that a particular pattern is formed, and only claim

102 actually require that any pattern is formed. It is therefore the position of the Examiner that as both the present Claims and the cited prior art use an ink jet *printer* , a pattern, even if it is at the microscopic level would be formed . Therefore, the rejection of record is maintained and the Claims are not patentable over the cited prior art.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander G. Ghyka whose telephone number is (571) 272-1669. The examiner can normally be reached on Monday through Thursday during general business hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Lebentritt can be reached on (571) 272-1873. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AGG
January 19, 2006

ALEXANDER GHYKA
PRIMARY EXAMINER

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